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Reporting on Risk: How the Mass Media Portray Accidents, Diseases, Disasters and Other Hazards

Eleanor Singer & Phyllis M. Endreny*

Introduction

Most of the information we have about risks comes to us by way of the mass media. But it does not, for the most part, come as explicit reporting about "risk." Instead, most reporting about hazards and their associated risks comes in the guise of news and feature stories about accidents, illnesses, natural disasters, and scientific breakthroughs.

Willy nilly, such reporting communicates risk information to media audiences and to the family and friends with whom they discuss what they have heard or read. Such information is communicated not only by what is selected for coverage and what is not, but also by how it is covered — where the story is placed, how much space or time is devoted to it, whether it is accompanied by visuals or not. All this, of course, is quite apart from whether or not explicit risk-related information is included in the story, and if so, of what kind.

What is it, then, that the average reader or viewer would learn from the way hazards and their associated risks are selected and presented by the media?

For four months in 1984 we monitored fifteen media selected to provide a sampling of national newspaper, newsmagazine, and television coverage as well as some comparisons with local media, media aimed at specialized audiences, and media dealing with specialized topics; a subset of these were monitored for four weeks in 1960. During these

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two sampling periods, every story dealing with a hazard or a group of hazards was selected for analysis, assigned to a specific hazard category (e.g., natural hazards), and given a code number pertaining to a specific hazard within that category (e.g., flood). From the total number of stories identified in this fashion — 3,828 — we randomly selected a smaller number (952 in 1984 and 323 in 1960) for detailed analysis. For each of this smaller number of stories, we coded a set of media variables — e.g., when and where it appeared, how long it was, and whether it was accompanied by any graphics. For each, we also coded the specific hazard; factual details in the story; kind of information contained about risk; locus of blame or responsibility; the sources quoted; the research (if any) cited; groups noted as being at risk; the proportion of the story devoted to risks and to benefits, and so on.

Using the data collected in this fashion, we then addressed four broad questions: What kind of hazards do the media report? What kind of information do they present about them? Who is held responsible for hazards and their prevention? How accurate is reporting on hazards in the media? This article summarizes our findings.

What Kind of Hazards Do the Media Report?

We inferred three general principles governing the definition and selection of hazards by the media. First, what is defined as a hazard changes over time. For example, in 1960, most stories about nuclear energy emphasized benefits rather than costs; by 1984, the proportions had reversed. In the 1960's, prior to the U.S. Supreme Court ruling on *Roe vs. Wade*, stories about abortion emphasized the risks of illegal abortions to the mother; in 1984, stories about abortion emphasized the risks of legal abortions for the fetus.

Second, though the hazard definitions appearing in the mass media may change, the media in all likelihood do not initiate the changes; their definitions and selections of hazards for coverage are ordinarily shaped by sources other than the media themselves. For example, during our media-monitoring period, stories about the space shuttle

were numerous but made no mention of associated risks at all; after the Challenger exploded, this practice underwent significant change.

Third, a direct comparison between hazards as topics of news stories and as causes of death shows essentially no relationship between the two. However, the correlation between the number of stories about each hazard in 1960 and in 1984 is substantial. Thus, what is newsworthy did not change very much over a period of 24 years. But what is newsworthy does not correspond very well with the distribution of hazardous events in the real world, as measured by mortality figures. Why not? Because, as it turns out, the media tend to feature what the Statistical Abstract of the United States calls "catastrophic" accidents — accidents in which five or more people are killed simultaneously. Such accidents rank near or at the top in terms of media attention, even though with one exception (automobile accidents) they do not result in a large number of deaths per year. Thus, media definitions of risk are based on the drama of the single hazardous event, not on the cumulatively greater but less spectacular risks reflected in annual mortality figures.

We formulated several hypotheses about the hazards that would be attended to by the media. First, we predicted that stories about hazards with associated deaths or injuries would be longer and more prominently featured than other hazard stories. This hypothesis was supported both in 1960 and in 1984. Second, we hypothesized that stories about "new" hazards would be longer and featured more prominently than other hazards. This hypothesis, too, was supported, and this journalistic bias in favor of the new and the current may limit coverage of chronic hazards such as illness, air or water pollution, poverty, and hazardous working conditions, unless some dramatic happening makes them suddenly "news."

Third, we predicted that the media would attend disproportionately to hazards affecting the more affluent and powerful. Admittedly, without knowing more about the number of hazards affecting each group, it is difficult to say whether coverage is too much or not enough. The evidence we were able to bring to bear on this

hypothesis is mixed. Relatively few stories in either year, and fewer in 1960 than in 1984, mentioned such social categories as race, gender, class, and age. But the majority of stories mentioning such categories were about the less affluent and the less powerful: blacks, women, poor people, and the elderly. Nevertheless, we concluded that the small number of stories (3 in 1960 and 62 in 1984) dealing explicitly with hazards of blacks, women, the elderly, or the poor is evidence of bias — i.e., a disproportionate lack of attention. However, those stories that do deal explicitly with hazards affecting one or more of these groups were longer, not shorter, than other stories. Fourth, we expected that various specialized media would attend disproportionately to the hazards of their particular audience (e.g., blacks, women), but we found no evidence for this in the small sample of media we examined. However, because of the small number of specialized media we looked at, and the short sampling period, our evidence for this hypothesis is severely limited.

Finally, we predicted that geographic location would affect the amount of coverage, with hazard stories about countries “close” to the U.S., geographically and culturally, receiving more coverage than warranted, and countries geographically and culturally distant receiving less. The evidence for this proposition is meager, however. News about hazards in the U.S. is indeed given disproportionate attention in the U.S. press; but there are no consistent biases in favor of other parts of the world.

What Kind of Information Do the Media Communicate about Risk?

So far, we have talked about principles of selection and definition. But what kind of information is presented by the media about those hazards they choose to feature?

As noted, the media generally do not report on hazards and associated risks. They report on specific instances of a hazard (e.g. a flood, a plane crash, the pollution of a town’s water supply) that produce or are accompanied by specific harms, i.e., so many dead, so

many hurt and so many houses destroyed. From such scenarios we have abstracted, for purposes of this research, concepts of hazard and risk, benefit and cost, but journalism is not about these abstract concepts.

There is an inherent conflict between the business of news and what social scientists and others call risk communication. To communicate information about hazards and risks in a way calculated to foster rational decision-making means providing detailed and precise information about immediate and long-term consequences, to weigh the costs and benefits of a hazard and its alternatives for the individual and for society, and to discuss the issues, moral and economic, that inhere in hazardous processes and events.

But reporting about hazards is ordinarily reporting about events rather than issues, about immediate consequences rather than long-term considerations, about harms (injury, property destruction, death) rather than risks — i.e., the statistical probability of harm. Alternatives are almost never considered in a story about a particular hazard, and when they are considered, their risks and benefits are not. Moral or ethical issues are generally absent from news stories about hazards, and even economic issues are for the most part ignored.

If these omissions were errors on the part of journalists, there would be reason for optimism. But for the most part, they are not. Nothing in the rules of journalism says that the reporter must, in addition to describing an industrial accident, also inform readers about the likelihood of such an event occurring again, or about the risks posed by the industry in general, or about alternatives and their benefits and costs. "Enterprise" journalism might deal with any or all of these issues, but enterprise journalism is likely to remain a minor part of the journalistic enterprise. Nevertheless, according to laws spelled out by Kahneman and Tversky, the media do communicate risk information. They do it by the prominence and space accorded the account of a hazard, but these indirect signals need not correspond to the actual probability of its occurrence or the likelihood of its causing harm.

How Accurate Is the Information Communicated?

A broad definition of accuracy might insist that, to be considered accurate, news stories about a hazard should also be comprehensive: should include details such as the likelihood of its occurrence; the annual mortality associated with it; and whether or not alternatives to the hazard are safer or less safe than the one under consideration. If this were the standard of accuracy, most hazard reporting would have to be accounted inaccurate. Instead, we adopted a much less stringent standard, one against which we tested only a subset of all hazard stories.

We identified all those news or feature stories in our sample that referred to a research report and cited a published source for that report, and then systematically compared the two accounts. Many of the discrepancies we observed in this comparison involve omissions of qualifying statements and details of method. Other deviations involve shifts in emphasis, less precise wordings, and more colloquial terms. But two-fifths of the news stories we coded had one or more statements that were substantially different from statements in the original research report. For example, an NBC News story said that researchers “studied 133 men who suffered massive heart attacks while exercising.” In fact, only nine of the 133 had actually suffered a heart attack while exercising. One report could not be located at all because the reference in the news story was incorrect. Thus, in contrast to earlier research, which had concluded that errors of omission are much more frequent than errors of commission in the reporting of science news, our own study suggests that errors of commission also occur in a substantial number of cases.

Whether or not such omissions and alterations should be regarded as inaccurate reporting depends on how we define accuracy. For example, most existing information about risks is partial and contingent. Beliefs about whether or not a particular substance poses a hazard to humans, and how much of a hazard it poses, are based on assumptions, research findings, statistical calculations and extrapolations. If mass media accounts do not reflect limitations in the data or the research methods used, and if conflicting findings are

presented without interpretation or evaluation, then flaws exist in the communication process, whether we call these flaws "inaccuracies" or give them some other name.

What is particularly troubling is the suggestion, in our findings, that omissions and alterations are more likely in bylined stories than in anonymous ones. It is troubling because it underlines the existence of different standards for journalists and scientists, not simply carelessness on the part of reporters protected by anonymity. Yet, the fact that the wire service stories contained the fewest substantively different statements is cause for comfort, since these stories are distributed more widely than those by bylined journalists, even when syndicated.

Science in the popular press is livelier and easier to read than science in the scholarly journals. It is also simpler, sharper, and less ambiguous than science in those journals; and science in the scholarly journals is already simpler, sharper, and much less messy than the science that takes place in the laboratory or in the field. Without a great deal of additional research, we cannot know the consequences of such simplification. But we can speculate that science and scientists come across as more authoritative than they really are, and that scientific findings elicit more confidence than may be warranted.

But the question of accuracy, as we have posed it, is only the tip of the iceberg. Much more frequent than a news report on an isolated study is the incorporation of many different research findings into a news story about a particular hazard — e.g., radon. In that situation, reporters must present not the results of one study but the conclusions of a number of scientists working in a given area. And the fact is that scientists often disagree, from whether or not the "big bang" theory can explain the origin of the universe, to whether or not electromagnetic fields are capable of causing cancer, to how much of a threat radon in homes really is. Under these circumstances, what does accurate reporting consist in?

The practice of "objective" journalism consists in presenting both (or more than two) divergent points of view on an issue. Whether that is

“accurate” reporting or not depends on whether the different positions are equally compelling, or whether instead the weight of evidence clearly favors one side. Unfortunately, this is information the reader or viewer is rarely made privy to.

The even-handed model of reporting on political opinions or issue positions is not necessarily good for reporting on risk. The reader or viewer needs a knowledgeable appraisal of the evidence: Which, if any, side does it favor? Is it too early to tell? When is better evidence likely to become available?

Sometimes, of course, the positions are political rather than scientific, or at least a mixture of the two. In that case, we might ask “accurate” reporting to separate the two components, and clarify for mass media audiences to what extent the conflict is about the factual implications of evidence, and to what extent it is about their economic or political or ethical implications, instead.

Who Is Held Accountable for the Hazard?

We distinguished two kinds of accountability: blame for the occurrence of a hazard and responsibility for its prevention. Media attributions of accountability were much more frequent in the second, preventive sense than in the first. Further, those agents responsible for preventive action were not necessarily the same as those blamed for its occurrence.

At least half of the stories we analyzed made no attributions of blame at all, either because responsibility was taken for granted or because the issue of blame did not arise. For example, stories about natural hazards were particularly unlikely to include explicit attributions of blame. We noted no differences in this tendency either over time or between media.

Blame for the occurrence of a hazard varied according to the type of hazard involved. Victims, for example, tended to be held accountable in the case of activities that could be construed as voluntary, but not in the case of other hazards. (Where blame was assigned at all, they were also held accountable for illness, but relatively

few illness stories assigned such a responsibility.) In a sense, then, the interesting question is how some activities come to be construed as voluntary, others as involuntary. The ongoing debate about whether or not alcoholism is an illness, and the extent to which heredity is responsible for its expression, is a case in point.

Recent interest in public responses to radon has turned up an apparently paradoxical finding: risks tend to be perceived as more serious when there is someone to blame. Radon from natural deposits of radioactive rock tends to be ignored by the public, whereas radon resulting from industrial waste disposal has led to organized public demands for cleaning up the offending source. It is unclear to what extent the media would or could counteract this tendency, which from the point of view of scientists assessing the relative risks of the two sources is misplaced.

We found no differences between media in their targeting of blame. But because reporting on risk is event-centered, all the media in our study tended to make what Fischhoff has called the fundamental attribution error: the tendency to attribute too much responsibility to individual actors, including individual corporations, and too little to the social and environmental constraints within which they act.

Turnabout on Attitudes Toward Risk?

We could find no evidence of increasing aversion to risk on the part of the media between 1960 and 1984. On the contrary, we found some very slight tendency in the reverse direction. Hazard stories in 1984 gave somewhat more attention to benefits than they had in 1960, and they were also somewhat more likely to include a discussion of alternatives to the hazard and to reject the alternative in favor of the hazard itself. These are all small shifts, to be sure, and may involve reporting on different hazards rather than a changing view of specific hazards. Still, they may be indicative of a subtle change in the social climate pertaining to the acceptance of risk.

The 1980's in the U.S., beginning with the presidency of Ronald Reagan and continuing with that of George Bush, came to symbolize the retrenchment of government in favor of increasingly unregulated private activity — a development spurred, perhaps, by decades of increasing regulation and government expansion. At the same time, the economic situation of the country consistently declined. Increasing media emphasis on the benefits of risky activities instead of their costs, and on the considerable costs of reducing these risks, may well reflect both of these social trends. And, although the Clinton presidency is more hospitable to a government role in economic activity than its predecessors, it seems to be equally concerned about the mounting costs associated with government programs, including those involved in risk reduction. Thus, institutional forces pushing toward a reappraisal of how much risk society is willing to tolerate are likely to continue in the foreseeable future.

